

WHAT IS CLAIMED IS

1. In a PCM modem system having an analog and digital modem coupled together via a communications channel and in which training sequences are transmitted from the analog modem to the digital modem and from the digital modem to the analog modem during the startup mode, a method for reconfiguring either modem transmitter parameters during a data mode, comprising the steps of:

detecting a predetermined modem system characteristic;  
generating new transmitter parameters as a result of the detection of the predetermined characteristic; and,  
transmitting the new transmitter parameters to a modem in the data mode without switching back to the startup mode.

2. The method of Claim 1, wherein the predetermined modem system characteristic is a measured communications channel characteristic, wherein the communications channel is measured at one modem and wherein the new transmitter parameters are sent from the modem at which the channel is measured to the modem to which it is coupled.

3. The method of Claim 2, wherein the communications channel is measured at the digital modem.

4. The method of Claim 3, wherein the transmitter parameters include precompensation parameters, wherein the measurement taken at the digital modem measures channel impairment and wherein new transmitter precompensation parameters which are the result of measured channel impairment are transmitted to the analog modem to reconfigure the analog modem transmitter without switching out of the data mode.

5. The method of Claim 2, wherein the communications channel is measured at the analog modem.

6. The method of Claim 5, wherein the measurement taken at the analog modem measures downstream channel quality and wherein data which is the result of measuring an increase or decrease in the downstream channel quality is sent to the digital modem without switching out of the data mode for the reconfiguring of the transmit parameters of the digital modem.

7. The method of Claim 5, wherein the new transmitter parameters include constellation parameters and wherein the new constellation parameters are derived from measuring the communications channel at the analog modem and are sent to digital modem by the analog modem without switching out of the data mode for the reconfiguring of the transmit parameters of the digital modem.

8. The method of Claim 1, wherein the predetermined modem system characteristic is an out-of-limit transmit power level measured at the analog modem and wherein information relating to

the out-of-limit transmit power level condition is sent without switching out of the data mode to the digital modem, the digital modem transmitting new parameters to the analog modem in the data mode in response to the information relating to the out-of-limit condition to permit the analog modem to adjust its output power level.

9. Apparatus for use in a PCM modem system having a startup and a data mode for the transfer of information between modems to permit reconfiguring of the transmitter of a modem, comprising:

circuitry at a modem after entry into the data mode from the startup mode for transmitting in the data mode the information used to reconfigure a modem transmitter without entry back into the startup mode, whereby in-band signaling is used to reconfigure a modem transmitter.

10. A method for use in a PCM modem system having a startup mode and a higher data rate data mode for the transfer of information to permit reconfiguring of a modem transmitter, comprising after entry into the data mode from the startup mode, the step of transmitting in the information used to configure a transmitter in the data mode without entry back into the startup mode, whereby in-band signaling is used to reconfigure a modem transmitter without having to switch to the startup mode, thus eliminating <sup>inherently</sup> switchover time and taking advantage of the higher data rate associated with the data mode. (inherent)

11. The method of Claim 10, wherein the startup mode uses Pulse Amplitude Modulation, <sup>use background to make 103</sup> wherein the data mode uses PCM modulation, and wherein the data rate associated with PCM

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modulation is faster than that associated with Pulse Amplitude Modulation, whereby remaining in the data mode results in more rapid parameter transfer and reconfiguring of a modem transmitter.

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